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Mr. Phil Guidice, Commissioner
Department of Energy Resources
Commonwealth of Massachusetts
100 Cambridge Street, Suite 1020
Boston, MA 02114

Dear Commissioner Guidice:

Plum Creek Timber Company appreciates the opportunity to comment on the recently released study on Biomass Sustainability and Carbon Policy, known as the Manomet Study.

Plum Creek owns 7,000,000 acres of timberland in 19 states, over 1 million of which are in New England. Our land is managed as timberland primarily for the production of multiple forestry products, including biomass for energy feedstock. For over 10 years Plum Creek has been certified under the Sustainable Forestry Initiative and was the first company in the US to receive sustainability certification across our ownership. Plum Creek is the largest supplier of forestry biomass to energy facilities in the US and, while we do not own land in Massachusetts, several of our customers sell Renewable Energy Certificates (RECs) to customers in Massachusetts and other New England states. We recognize that the renewable energy goals in New England have been very important in the growth of renewable energy and reducing reliance on fossil fuels.

We have completed a preliminary review of the report and are very concerned with the conceptual framework selected for modeling carbon impacts which we believe dramatically under represents the carbon benefits of bioenergy from forestry. Having said that, the study incorporates some important considerations that are valuable to include, such as the technology pathway being considered and the type of fossil fuel being displaced. We note that the conceptual framework used is counter to existing tested methodology and that it has not been peer reviewed. Because of the serious implications to the advancement of renewable energy in New England, Plum Creek recommends that the DOER seek technical peer reviews of the carbon accounting conceptual framework as well as operational reviews of the operating assumptions before considering this to be science worthy of changing public policy.

This letter will detail one primary concern and also discuss three observations.

Primary concern: The “carbon debt” approach to modeling is flawed and dramatically underestimates the carbon benefits of sustainably produced forestry biomass.

This is our belief based upon the points discussed below, however a scientific process which includes peer review could influence our belief as well as reinforce important considerations evaluated in the study. We believe the approach is flawed for four reasons:

1. It only considers the harvested site and not the whole forest.

The study chooses to account for forest carbon capture only on sites that are harvested, after harvest, rather than looking at the whole forest or landscape level. This overlooks the current carbon capture function of those sites not selected for harvest, which precludes a calculation of the balance between carbon capture and carbon release in a forest system. Such a calculation is essential in determining the sustainability of a forest system. The study does state that timber growth exceeds removal for all purposes in Massachusetts. This is also the case for the whole country and has been for several decades

The study does acknowledge that biomass for energy is only one co-product being produced as part of a timber harvest, but does not acknowledge that it is a minority product of the lowest value, even after the benefit of Massachusetts RECs has been assigned. A fair accounting of carbon should consider carbon captured in stands left as growing stock as discussed above, and also the carbon benefits of the more valuable products that accompany biomass in the forest harvest. This would include carbon storage in durable wood products and substitution for more energy intensive building materials such as concrete and steel.

Our experience under sustainability certification tells us that to understand the sustainability of a forest (whether it be timber volume or carbon stocks), the analysis must include a landscape scale that evaluates the performance of all age classes, it must consider the range of forestry products produced and their carbon dynamics, and it must use realistic pricing assumptions that would be determinant of product sale tradeoffs. The Manomet study does none of these things.

2. The biomass scenario does not accurately reflect operational practices.

Plum Creek has harvested biomass in conjunction with other products for several years now in New England as well as other parts of the country. The biomass scenario described in the study simply does not accurately reflect harvest practices in the region. The study correctly states that the harvest event is determined by the more valuable products. But the biomass-for-energy opportunity is primarily created by the tops and limbs of that would be left to decompose without biomass markets. In cases where pulpwood markets are non-existent or very weak, the use of pulpwood generated by the harvest is sold to an energy outcome. However, the intensity of harvest is not increased. We expect energy markets for biomass to

develop enough to allow us to economically thin certain stands for forest health. The existence of biomass markets does not result in the increase in harvest intensity as represented in the study, per our experience in Maine. We cannot see why it would in Massachusetts.

3. Biogenic carbon is not given any credit over geologic carbon

We agree that all CO₂ is the same, but the source of carbon producing CO₂ is extremely important in determining climate impacts. Geologic carbon is that which has been stored permanently for millions of years in the form of things like coal and oil. By removing it from permanent storage to use for energy, new carbon is introduced into the atmosphere and contributes to increased greenhouse gas concentrations. On the other hand, biogenic carbon is carbon that is freely cycled between the atmosphere and solid forms such as cellulose in wood or grass. This recycling of carbon is known as the carbon cycle. While all CO₂ is the same, the source of the carbon is very important in understanding whether new carbon is being added to the atmosphere. For managing greenhouse gasses, this means that wood is better than coal (or any other fossil fuel) for producing energy, and it starts on day 1.

The carbon debt approach used in the Manomet Study assigns no benefit to the biomass scenario for displacing the introduction of new carbon into the atmosphere

4. The benefit of avoided emissions of biomass decomposition does not appear to be counted

In the biomass scenario, emissions from the combustion of tops and limbs are counted toward the carbon debt. In the Business as Usual (BAU) scenario, tops and limbs from the same harvests would be left to decay, creating CO₂ and methane emissions. These emissions should be counted: either as emissions against the BAU or as avoided emissions credited to biomass. By utilizing a portion of the tops and limbs for energy, smaller quantity of greenhouse gasses is emitted than by leaving the tops and limbs on the site to decompose.

Additional concerns from the study that we would like to comment on.

We have three additional concerns from the study:

1. Sustainability regulation

Recommendations for sustainability regulation are not warranted and are based on conjecture rather than empirical observation. The report acknowledges that the rate of harvest will not increase based on an increase in biomass markets and that the rate of harvest "is unlikely to cause statewide ecological changes." Yet it indicates that there "could be" more localized impacts. We submit that this is a conjecture that expresses a legitimate but unwarranted concern rather than any empirical conclusion. A better approach would be to actually observe

physical impacts to sustainability attributes that can be correlated to increased biomass markets. This could be done in Maine where biomass markets have existed for some time.

Our experience is that the existing regulatory framework for forestry in the US is extensive and very effective. The framework includes state forest practice regulations interrelated with federal statutes such as the Clean Air Act, the Clean Water Act, and the Endangered Species Act. In addition to the regulatory framework exists a strong practice of sustainability certification which is unmatched anywhere in the world that strengthens and improves forest practices through periodic and rigorous audits. These are both adaptive in that practices are monitored and then revised as necessary to address evolving issues. Given the fact that biomass is only a minor co-product of the range of products produced in forestry, managing it under a separate standard than from the remainder of the forestry harvest is impractical. For such a small value contribution to the harvest, the additional complexity and burden would motivate some landowners to simply bypass the energy opportunity and leave the material to decay and produce methane, a much more potent greenhouse gas than CO₂.

Sustainability issues related to biomass should be addressed under the existing forestry regulatory framework and based on established causal relationships rather than unsubstantiated conjecture and “worse-case” fears.

2. Combustion efficiency

Combustion efficiency is an important consideration and we appreciate the acknowledgement of it in the study. However, the desire for efficiency should not replace the use of wood with fossil fuels, such as coal. Consider the following:

- Fossil fuel energy benefits from a century of technology improvements and continued federal subsidies. Biomass energy is new with many efficiency opportunities in development. We should not give up the renewable energy opportunity provided by forestry biomass that we can have now for an efficiency ideal imposed on biomass energy that has never been placed on fossil fuel energy.
- If energy facilities capture more energy because of efficiency, they will be rewarded under the existing Massachusetts RPS by receiving greater REC income from a given amount of feedstock.
- Currently Massachusetts RECs support renewable energy production from biomass using a range of combustion technologies. Without that support, biomass demand for forest owners would potentially go away without being replaced by demand from more efficient facilities, at least for a long time. Energy production would revert to fossil fuels, such as coal.

3. Supply estimate

The study’s estimates of available supply appear to be extremely low. One important issue is that historical consumption is considered “already accounted for” when in reality, regional pulpwood demand is in decline as paper mills continue to close. Replacement demand for this

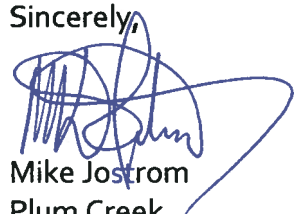
material is an important incentive to landowners to continue investments in sound forestry practices.

We believe that markets have proven to be very reliable in preventing supply shortages. Consider that, in the last 60 years there has been an unprecedented boom in housing as well as paper product demand. Yet in spite of that, forest inventories have increased in the US by 50% over the same time period. The availability of markets for landowners have stimulated investment in forestry and the conversion of marginal agricultural land to forestry uses. And financial markets for plant construction have created rigorous due diligence regarding supply and other success factors that have constrained the development of new demand where supply is already ascribed to existing investment.

Thank you for the opportunity to comment on the Manomet Study. We reiterate that it would be a serious error to treat the results of this study as complete science before the numerous questionable issues are explored through credible peer review. The study appears to be based on a faulty conceptual framework, and changing policy based on it would lead to a reversal in the progress New England has made in renewable energy development.

We look forward to the opportunity to work with you during the regulatory process.

Sincerely,



Mike Jostrom
Plum Creek

Director Renewable Resources